ILLINOIS

Proposal to the Senate Educational Policy Committee

PROPOSAL TITLE:

Establish the Siebel Digital Transformation Institute in the National Center for Supercomputing Applications

CONTACT: Dr. William Gropp
Director, National Center for Supercomputing Applications
Professor, Department of Computer Science
217-244-6720
wgropp@illinois.edu

BRIEF DESCRIPTION:

We propose to establish the Siebel Digital Transformation Institute (SDTI), an innovative program to create the scientific underpinnings of the field of human-centered, digital transformation that would be jointly headquartered at the University of Illinois, Urbana-Champaign (Illinois) and the University of California, Berkeley (Berkeley). Illinois and Berkeley, working with key private and public sector partners, will lead a consortium of world-renowned universities to catalyze research activities and advances in Machine Learning, Artificial Intelligence, the Internet of Things and Big Data predictive analytics.

The SDTI will replace and expand the activities of the Siebel Energy Institute, established in 2015 and headquartered at Berkeley. On our campus, the program will be housed at the National Center for Supercomputing Applications (NCSA). With decades of experience working with faculty, staff, and students to apply advanced computing and data to transform both scholarship and society, NCSA is uniquely positioned to house the SDTI. NCSA has a history of managing national computing resources, (e.g., the Blue Waters supercomputer and the data facility for the Large Synoptic Survey Telescope), and has long supported both innovative cyberinfrastructure for campus (the Deep Learning MRI) and access to computational resources for faculty in departments and colleges across campus (through programs such as NCSA Faculty Fellows).

The cornerstone of SDTI activities will include 50 annually awarded research grants of up to $100,000 per project. In addition, each award will include up to $150,000 in computing and storage resources. Other activities will include:

- a visiting professor and research scholar program
- industry-oriented workshops and short courses
- 1-2 month focused research collaborations
- a corporate partners program

- and an annual conference at which scholars from across the Institute will present the results of their research.

All of these activities are similar to ones already conducted at NCSA, which means that the SDTI can build on NCSA's proven track record.

The SDTI will be supported by The Thomas and Stacey Siebel Foundation at a level of $10 million in current-use funds annually, for an initial period of five years. Thomas Siebel is an alumnus of the University of Illinois and has provided generous gifts for the Thomas M. Siebel Center for Computer Science and the Siebel Design Center, as well as endowing chairs in History and Computer Science.

Administratively, the SDTI will be part of NCSA, a permanently established institute on the inventory of the Illinois Board of Higher Education. NCSA reports to the Office of the Vice Chancellor for Research. The NCSA Director will assume oversight of the Institute's activities and access to infrastructure.

JUSTIFICATION: *(Please provide a brief but complete rationale for your request.)*

Computing and data are increasingly important to many aspects of scholarship and society. The SDTI will greatly enhance Illinois' ability to support innovation in the use of computing and data. The seed funding provided by the SDTI will help faculty explore new ideas in the use of digital technology. The SDTI will also create a community of digital explorers who will help accelerate the efforts of these research grants as well as provide a home for communities to collaborate on setting new directions in computing and data. As has been the case with the Siebel Energy Institute, which has offered similar, though smaller in number, types of research grants, these grants will enable researchers to perform the initial work in testing and developing ideas that are needed to pursue larger collaborations and funding. In addition, the other activities of the SDTI will stimulate and support the interdisciplinary collaborations that are important to the application of advanced computing and data to all areas of scholarship.

NCSA is well positioned to fully support the SDTI. With 114 faculty affiliates originating from 44 departments in 8 colleges and schools, including ACES, Business, Engineering, FAA, iSchool, LAS, Media, and VetMed, housing the SDTI at NCSA means that faculty from across campus have access to the computing and data resources they need to advance scholarship and society.

BUDGETARY AND STAFF IMPLICATIONS: *(Please respond to each of the following questions.)*

1) *Resources*
   a. *How does the unit intend to financially support this proposal?*

   The funding of the activities described in this proposal is reliant upon the funding provided via the private gift agreement executed by the UI Foundation, on behalf of the University of Illinois at Urbana-Champaign. The agreement specifies:
   - $5M per year for five years for competitive funding of research activities at SDTI consortium universities.
   - $2.5M in annual funding to support other scholarly activities at Illinois and Berkeley.

- $2.5M per year to support the administration, operations and technical services of SDTI at its two locations in California and Illinois.

Funding may be continued after the initial period of five years. If that becomes the case, the SDTI could potentially continue past the initial five-year period.

b. *How will the unit create capacity or surplus to appropriately resource this program? If applicable, what functions or programs will the unit no longer support to create capacity?*

The activities of the SDTI are aligned with activities that NCSA already conducts; the staff have the skills and experience for effective implementation. Staff capacity for administration, operations, and technical services will be funded through the aforementioned funding support.

c. *Will the unit need to seek campus or other external resources? If so, please provide a summary of the sources and an indication of the approved support.*

This is a partnership with Berkeley and with a private cloud provider, which has promised $3M/year in computing time (agreement pending). Berkeley, as home to the Siebel Energy Institute, is a partner, and is securing significant computing resources from the National Energy Research Scientific Supercomputing Center (NERSC) at Lawrence Berkeley National Laboratory (LBNL). Computing at NCSA will be provided as part of the previously announced investment in campus cyberinfrastructure.

d. *Please provide a letter of acknowledgment from the college that outlines the financial arrangements for the proposed program.*

The financial arrangements are outlined in the responses to the preceding questions, with the full support of Dr. William Gropp as Director of the NCSA, and Dr. Susan A. Martinis as Interim Vice Chancellor for Research (both signatories to this proposal).

2) Resource Implications
   a. *Please address the impact on faculty resources including the changes in numbers of faculty, class size, teaching loads, student-faculty ratios, etc.*
   b. *Please address the impact on course enrollment in other units and provide an explanation of discussions with representatives of those units. (A letter of acknowledgement from units impacted should be included.)*
   c. *Please address the impact on the University Library (A letter of estimated impact from the University Librarian must be included for all new program proposals. If the impact is above and beyond normal library business practices, describe provisions for how this will be resourced.)*
   d. *Please address the impact on technology and space (e.g. computer use, laboratory use, equipment, etc.)*

   There are no resource implications for (a) through (c). For (d), the NCSA has existing

space to support the SDTI. Computer support will draw on resources provided by our partner, Berkeley, through the NERSC and the private Cloud provider.

DESIRED EFFECTIVE DATE:

The soonest possible date in 2019.

STATEMENT FOR PROGRAMS OF STUDY CATALOG:

N/A

CLEARANCES: *(Clearances should include signatures and dates of approval.* ***These signatures must appear on a separate sheet.*** *If multiple departments or colleges are sponsoring the proposal, please add the appropriate signature lines below.)*

Signatures:

February 15, 2019

_____   _____
Proposal Sponsor: William Gropp   Date:

February 15, 2019

_____   _____
Proposal Clearances: Susan A. Martinis   Date:

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

University Library

Office of University Librarian and Dean of Libraries
230 Main Library, MC-522
1408 West Gregory Drive
Urbana, IL 61801

March 4, 2019

Dr. William Gropp
Director, National Center for Supercomputing Applications
wgropp@illinois.edu

Dear Dr. Gropp:

Thank you for providing the University Library with the opportunity to review the National Center for Supercomputing Applications proposal to establish the Siebel Digital Transformation Institute. Based upon the proposal that you submitted to the Library on March 4, 2019, we do not believe that there will be any substantive impact on existing library offerings—either in terms of library materials or personnel.

If additional services or materials are required as the program evolves, I have every confidence that we will be able to work together to meet the needs of the students.

Sincerely,

John P. Wilkin
Juanita J. and Robert E. Simpson
Dean of Libraries and University Librarian

Office of the Provost and Vice Chancellor
for Academic Affairs

Swanlund Administration Building
601 East John Street
Champaign, IL 61820

February 17, 2019

Gay Miller, Chair
Senate Committee on Educational Policy
Office of the Senate
228 English Building, MC-461

Dear Professor Miller:

Enclosed is a copy of a proposal from the Office of the Vice Chancellor for Research to establish the Siebel Digital Transformation Institute in the National Center for Supercomputing Applications.

Sincerely,

Kathryn A. Martensen
Assistant Provost

Enclosures

c: W. Gropp
    S. Martinis